

REMARKS/ARGUMENTS

I. Introduction:

Claims 1, 4, 5, 9, 13, 17, 18, 19, 20, and 22 are amended herein. Claims 1-24 are pending.

II. Claim Objections:

Claims 5, 13, 18, and 20 have been amended to replace “the subscriber unit” with “the selected subscriber unit”.

Claim 22 has been amended to replace “an OFDM burst” with “said OFDM burst”.

III. Claim Rejections – 35 U.S.C. 102 and 103:

a. First Set of Rejections

Claims 1, 2, 5, 6, 9, 10, 14, and 17-20 stand rejected under 35 U.S.C. 102(e) as being unpatentable over U.S. Patent No. 6,333,937 (Ryan) in view of U.S. Patent No. 6,169,744 (Grabelsky).

Independent claim 1 recites a method for operating a subscriber unit which includes receiving an exclusive assignment to a toneset within an OFDM burst structure, and transmitting an OFDM burst using tones specified by the exclusive assignment while leaving other tones in the OFDM burst such that the tones are available for use by other subscriber units. The OFDM burst is an access request burst. Claim 1 has been amended to clarify that the toneset represents a non-contention access request channel and specify that termination of the inactive period is identified.

Ryan is directed to an access retry method for shared channel wireless communication links. Each remote station in a wireless network cell counts the number of retries attempted to gain access to a base station for a particular message. The base station runs a channel allocation manager program that provides additional channels to the remote station based on the number of retries the remote station required to successfully transmit the access request message.

Ryan does not disclose receiving an exclusive assignment to a toneset within an OFDM burst structure during an inactive period, as set forth in amended claim 1. In contrast, Ryan allocates channels upon receiving an access request message which specifies the number of retries attempted by the remote station. During an inactive period, there would be no collisions or retries, therefore, the base station would not need to allocate any channels to the remote station. The remote station would continue to send access requests in a contention mode. The object of Ryan is to provide the base station with accurate information about reduced performance that remote stations suffer during an interval of high usage and not during an inactive period.

Grabelsky et al. disclose a method and protocol for a MAC layer for LANs with multiple-priority traffic. The protocol includes a dead time silence interval, which is used to begin an open-contention interval; an open contention interval, to allow all stations with data to transmit to contend for access to a physical medium, intent to transmit signal, and a combined contention signal. The dead-time silence interval is used to resolve contention before data transmission proceeds. During this open contention interval, the contending stations send a signal to a network station.

Applicants' invention, as set forth in the claims, uses exclusive allocation rather than relying on a contention mechanism as used by Grabelsky et al. The exclusive assignment prevents collision of a request for resumption of the unsolicited grant service. If the requests were to collide, data slots would not be available soon enough to avoid loss of data. This effect would directly impact call quality for voice data.

Accordingly, claim 1 is submitted as patentable over Ryan and Grabelsky.

Claims 2-4 and 21-24 each depend directly or indirectly from independent claim 1 and are, therefore, each believed to be allowable over Ryan for at least the reasons set forth above with respect to claim 1. Each of these dependent claims recite additional limitations which, when considered in light of claim 1, are believed to further distinguish the claimed invention over the art of record.

Independent claim 5 recites a method for operating a central access point which includes sending an exclusive assignment to a toneset within an OFDM burst structure to a selected subscriber unit, and receiving an access request OFDM burst that includes the toneset as transmitted from the selected subscriber unit. Claim 5 has been amended to clarify that the toneset represents a non-contention access request channel and is submitted as patentable for the reasons discussed above with respect to claim 1.

Claims 6-8 each depend directly from independent claim 5 and are, therefore, each believed to be allowable over Ryan for at least the reasons set forth above with respect to claim 5.

Claims 9, 17, and 19, and the claims depending therefrom, are believed to be allowable over the cited art for at least the reasons set forth above with respect to claim 1.

Claims 13, 18, and 20, and the claims depending therefrom, are believed to be allowable over the cited art for at least the reasons set forth above with respect to claim 5.

Claims 3, 7, 11, 15, and 21-24 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan in view of Grabelsky and further in view of U.S. Patent No. 6,847,635 (Beser).

Beser discloses a method to transmit silence compressed voice over IP efficiently in DOCSIS cable networks. When a cable modem detects no voice activity from a subscriber, a CMTS stops providing the periodic stream of time slots. When voice activity for the subscriber resumes, the cable modem requests the stream of time slots, and resumes transmission. Conventional systems such as Beser, which provide dedicated

access request slots that are allocated to inactive service flows, use bandwidth that is then unavailable for other services. Each inactive call supported by the network adds to this access request overhead since the subscriber units do not share these access request slots.

Applicants' invention, as set forth in the claims, allows a single access request slot to provide an opportunity for multiple subscriber units to request a resumption of periodic grant slots after an inactive period where such time slots were temporarily unnecessary. This provides a more efficient activity resumption mechanism for service flows in a point to multipoint network.

As previously discussed, Ryan assigns sets of OFDM carriers upon identifying reduced performance at a remote station. The assignment of additional channels to remote stations is provided specifically to provide additional channels to the remote stations to improve performance at the remote stations during an interval of high usage. The objective of the invention of Ryan is to provide a base station with accurate information about reduced performance at a remote station during an interval of high usage to enable the base station to provide additional channels to remote stations. During a silent period, there are no requests sent to the base station, thus there is not a problem with reduced performance, and no reason to provide additional channels. Adding channels during a silent period would make the problem of unavailable bandwidth during a silent period worse. Furthermore, there is no reason to supply additional channels following a silent period because it is not known if there is reduced performance since requests are not sent during the silent period. As such, the proposed modification of Ryan would defeat the primary functionality of the Ryan method.

Claims 4, 8, 12, and 16 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan in view of Grabelsky and further in view of U.S. Patent Publication No. 2002/0101946 (Hartman). Hartman does not remedy the deficiencies of the primary reference.

b. Second Set of Rejections

Claims 1, 2, 5, 6, 8, 10, 14, and 17-20 stand rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,628,673 (McFarland et al.) in view of Grabelsky.

McFarland et al. disclose a scalable communication system using overlaid signals and multi-carrier frequency communication. Simple low data rate nodes are allowed to use a small number of sub-channels while more complicated nodes use the remainder.

Neither McFarland et al. nor Grabelsky et al. disclose receiving an exclusive assignment to a toneset within an OFDM burst structure during an inactive period and transmitting an access request burst using tones specified by an exclusive assignment, as set forth in claim 1.

Claims 2-4 and 21-24 each depend directly or indirectly from independent claim 1 and are, therefore, each believed to be allowable over McFarland et al. and Grabelsky et al. for at least the reasons set forth above with respect to claim 1. Each of these dependent claims recite additional limitations which, when considered in light of claim 1, are believed to further distinguish the claimed invention over the art of record.

Independent claim 5 recites a method for operating a central access point which includes sending an exclusive assignment to a toneset within an OFDM burst structure to a selected subscriber unit, and receiving an access request OFDM burst that includes the toneset as transmitted from the selected subscriber unit. Claim 5 has been amended to specify that an exclusive assignment to a toneset within an OFDM burst structure is sent to a selected subscriber unit during an inactive period at the subscriber unit and is submitted as patentable for the reasons discussed above with respect to claim 1.

Claims 6-8 each depend directly from independent claim 5 and are, therefore, each believed to be allowable over McFarland et al. for at least the reasons set forth above with respect to claim 5.

Claims 9, 17, and 19, and the claims depending therefrom, are believed to be allowable over the cited art for at least the reasons set forth above with respect to claim 1.

Claims 13, 18, and 20, and the claims depending therefrom, are believed to be allowable over the cited art for at least the reasons set forth above with respect to claim 5.

As discussed above, the other references cited, including Beser and Hartman, do not remedy the deficiencies of the primary reference.

IV. Conclusion:

For at least the foregoing reasons, Applicants believe that all of the pending claims are in condition for allowance and should be passed to issue. If the Examiner feels that a telephone conference would in any way expedite the prosecution of the application, please do not hesitate to call the undersigned at (408) 399-5608.

Respectfully submitted,



Cindy S. Kaplan
Reg. No. 40,043

P.O. Box 2448
Saratoga, CA 95070
Tel: 408-399-5608
Fax: 408-399-5609